Best Management Practices (BMP) Monitoring Protocol

Connecticut wetland and conservation commissioners received a demonstration of a portable skidder bridge (type of BMP) by the Connecticut Department of Environmental Protection's Bureau of Forestry and Wetlands Division. Photo by Paul Barten

The field and analytical tools in the BMP Monitoring Protocol enable foresters, regulatory and enforcement staff members, scientists, and others to identify and mitigate stormwater and sediment problems associated with forest roads and timber harvesting. Background information, field manuals, a desk reference, and software are available on the Forest-to-Faucet Partnership Web site. The BMP Monitoring Protocol has been adopted for periodic use by many of the 20 States in the Northeast and Midwest, and endorsed by the Northeastern Area Association of State Foresters. For example, the protocol was used to evaluate BMPs on 75 forest harvesting sites in Maryland from 2004 to 2005, and to measure overall compliance with required State water quality BMPs.

Forests, Water, and People Analysis

The four-step Forests, Water, and People Analysis highlights key areas where the conservation of forest land could maintain the quality of critical public water supplies, protect public health and biological diversity, and avoid the need for costly mitigation efforts in the future. The GIS layers include (1) an index for the ability to produce clean water, (2) the number of water consumers that rely on each of the 540 major watersheds in the Northeast and Midwest, (3) the proportion of private forest land in each watershed, and (4) the development or forest conversion pressure through 2030.

In June 2010, the index of the ability to produce clean water was used by several States in the Northeast and Midwest to describe water quality in their State Forest Resource Assessments.

Land Use Effects on Streamflow and Water Quality in the Northeastern United States

This book on the effects that land use has on water synthesizes the diverse scientific literature related to water supply, water quality, and land management. The book has been used by watershed forest managers on the Barkhamsted Reservoir watershed outside Hartford, CT, and will be used by natural resource professionals to better understand and make recommendations for managing and protecting forests, such as the priority forest areas recently identified in the State Forest Resource Assessments and Strategies.

Contacts for More Information:

***Paul K. Barten**, Professor of Forest Resources*
University of Massachusetts – Amherst
pkbarten@eco.umass.edu, 413.545.4853

***Dave Welsch**, Watershed Specialist*
Northeastern Area State and Private Forestry
Durham, NH, Field Office (Serving Connecticut, Massachusetts, Maine, New Hampshire, New York, Rhode Island, Vermont)
dwelsch@fs.fed.us, 603.868.7616

***Teri Heyer**, Watershed Forester*
Northeastern Area State and Private Forestry
St. Paul, MN, Field Office (Serving Iowa, Illinois, Indiana, Michigan, Minnesota, Missouri, Wisconsin)
theyer@fs.fed.us, 651.649.5239

***Karen Sykes**, Watershed Specialist*
Northeastern Area State and Private Forestry
Morgantown, WV, Field Office (Serving Delaware, Maryland, New Jersey, Ohio, Pennsylvania, Washington DC, West Virginia)
ksykes@fs.fed.us, 304.285.1532

The Forest-to-Faucet Partnership is a joint venture of the University of Massachusetts – Amherst and of the Northeastern Area State and Private Forestry of the Forest Service, U.S. Department of Agriculture. The primary objective of the partnership is to conserve forests in order to protect both aquatic ecosystems and public water supplies.

The USDA is an equal opportunity provider and employer.

Protecting Drinking Water at Its Source

USDA Forest Service
Northeastern Area
State and Private Forestry

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The Forest-to-Faucet Partnership has developed decision support tools and publications to help you protect source water. They are available at the Forest-to-Faucet Partnership Web site (www.forest-to-faucet.org) and can be applied throughout the Northeast and Midwest United States. This brochure describes the tools.

Use the following table to determine which tools may be most helpful to you.

If you are a …	Then you might use …
Forester	All of the tools
Research scientist	WFMIS; BMP Monitoring Protocol; Forests, Water, and People Analysis; Land Use Effects book
Water utility staff member	All of the tools
Regulatory agency staff member	WFMIS, BMP Monitoring Protocol
Conservation organization member	All of the tools
Watershed association member	All of the tools
Community leader	Source Water Stewardship Project; Forests, Water, and People Analysis; Land Use Effects book
College or university professor	WFMIS; Forests, Water, and People Analysis; Land Use Effects book
Engineer	WFMIS, BMP Monitoring Protocol, Land Use Effects book
Land use planner	All of the tools
Forest land owner	Source Water Stewardship Project; WFMIS; BMP Monitoring Protocol; Forests, Water, and People Analysis

Cover photo: This high-quality forested stream flows through Harwood, MD. Photo by Al Todd

Source Water Stewardship Project

Restoration priority areas were identified and mapped as part of a Source Water Stewardship Project in the Meramec River watershed in Missouri. Photo by Katherine Dockery

The Source Water Stewardship Project develops, tests, and refines a means of protecting water resources in rapidly changing watersheds. It consists of three phases implemented over an 18-month period: (1) the formation of a local steering committee and a broad-based advisory committee to complete a watershed assessment; (2) a 1-week strategy exchange with a team of volunteer experts who review and augment the findings of the assessment and make site-specific recommendations; and (3) collaborative implementation of key recommendations, often including the willing buyer – willing seller protection of key forest parcels, control of nonpoint source pollution, and education and outreach programs.

The project has been used in watersheds in Georgia, Maryland, Pennsylvania, New Jersey, Massachusetts, and New Hampshire, and on the Meramec River in Missouri.

Watershed Forest Management Information System (WFMIS)

The WFMIS uses geographic information systems (GIS) data and field measurements to identify important forest lands for conservation, road maintenance, and harvest operations. Customized ArcGIS software extensions and a comprehensive User's Guide can be downloaded at the Forest-to-Faucet Partnership Web site. WFMIS consists of three modules:

(1) The Watershed Management Priority Indices (WMPI) module guides you through the acquisition and organization of GIS data in order to produce maps with a Conservation Priority Index, Restoration Priority Index, and a Stormwater Management Priority Index. This module is especially helpful for outreach, education, and water quality protection programs.

(2) The Forest Road Evaluation System (FRES) module helps watershed forest managers and other landowners with large land holdings to develop preventive maintenance plans that minimize repair costs and problems with stormwater, sediment, and fish passage problems commonly associated with forest roads.

(3) The Harvest Schedule Review System (HSRS) module integrates harvest location, silvicultural methods, and time since harvest with topography and subwatershed boundaries, to track the proportion of landscape that is in transition from a recently harvested to fully forested condition. This information enables watershed forest managers to plan and sequence harvesting to meet long-term goals while avoiding or minimizing short-term impacts.

WFMIS has been successfully used by watershed forest managers in the water systems for Bridgeport and Hartford, CT, Boston and Springfield, MA, and Portland, ME.

A watershed protection forest …

- *is located in a watershed that provides life-enhancing environmental services, including clean drinking water and high-quality soils for growing trees.*
- *acts as a solar-powered living filter that sustains aquatic ecosystems and drinking water supplies.*
- *is comprised of layers (overstory, midstory, regeneration) with diverse tree species and ages.*
- *is growing vigorously to assimilate nutrients and sequester carbon.*
- *is resistant to and resilient after natural disturbances.*

The Quabbin Reservoir and surrounding forest in western Massachusetts supply water to Boston residents. Photo by Martina Barnes